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EVALUE: A COMPUTER PROGRAM FOR EVALUATING INVESTMENTS IN FOREST--ETC(U)

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Abstract

EVALUE, A FORTRAN program, was developed to provide a framework for cash flow analysis of investment opportunities. EVALUE was designed to assist researchers in evaluating investment feasibility of new technology or new manufacturing processes. This report serves as user documentation for the EVALUE program. EVALUE is briefly described and notes on preparation of a data deck are provided. Sample program input, sample output, and a complete listing of the program are provided.

Acknowledgment

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Agriculture
Forest Service
Forest
Products
Laboratory¹
General
Technical
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EVALUE: A Computer Program for Evaluating Investments in Forest Products Industries

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Forest Products
Technologist¹

Foreword

EVALUE is a FORTRAN computer program for investment cash flow analysis. It can be used as an aid in evaluating and analyzing potential investment opportunities, such as new manufacturing facilities, new equipment, or facility improvement. EVALUE can be used by researchers in economic studies of new technology or new manufacturing processes.

EVALUE was developed on the University of Wisconsin UNIVAC 1110 under the EXEC 8 operating system, using the Madison Academic Computer Center's version of the FORTRAN V language. To reduce problems of portability between computer systems, features common to the FORTRAN IV version of FORTRAN were used.

Introduction

This paper explains how to use EVALUE. It is strictly a users guide

and is not intended as an introduction to financial analysis. A user should be familiar with cash flow analysis techniques. Reference literature on the subject of financial investment analysis is cited at the end of this paper (1, 3, 5, 6)². It would also be helpful for the user to have some familiarity with computer programs, although this paper describes EVALUE in conventional terms which should be fairly understandable to novice computer users.

EVALUE provides a framework for investment cash flow analysis. The term, cash flow, refers to the periodic amounts or "flow" of cash (i.e., dollars) required as costs, revenues, or depreciation, in an economic activity. For example, the yearly cost of a raw material such as timber, for a manufacturing firm, is a cash flow. Estimates of future cash flows are used as data for EVALUE. The user determines an appropriate planning period and estimates all cash flows in the analysis. EVALUE provides the function of discounting cash flows and calculating investment analysis criteria, such as present net worth

and internal rate of return. Before EVALUE can be used, a considerable effort must be made by the user to become familiar with the particular investment opportunity being analyzed and to identify and estimate all associated cash flows. The analytical value of output from EVALUE is limited by the accuracy and reliability of data which are used as input. Obviously, all cash flows must be identified and estimated carefully and accurately in order for the analysis to be complete and not misleading.

Six categories of cash flows are used by EVALUE, including gross revenues, raw material costs, other variable costs, fixed costs, investments, and depreciation. Within principal cash flow categories, the user is free to specify particular cash flow items. For example, a user may specify up to 20 raw material cash flow items in the category of raw

¹ Member of State and Private Forestry staff located at the Forest Products Laboratory.

² Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

³ Italicized numbers in parentheses refer to literature cited at end of this report.

materials. The user estimates the amount, in dollars, of each item in each year of the analysis. In addition to annual cash flow estimates, EVALUE requires that the user specify initial investment, discount rate, salvage value, Investment Tax Credit, tax rate, and the number of years which are to be considered in the analysis.

EVALUE produces a two-part printed output. The first part is a detailed summary of the annual cash flows which were entered as data, along with computer calculated annual Profit Before Taxes, After Tax Profit, After Tax Earnings, and After Tax Net Cash Flow (fig. 1). The second part of the output illustrates the discounting of net cash flows, and provides several investment analysis criteria (fig. 2). Present Net Worth, Payback Period, Internal Rate of Return,* and Present Net Worth to Initial Investment Ratio are calculated for the investment opportunity being considered.

EVALUE Data

The data requirements are presented here in order of occurrence in an EVALUE data deck. Each type of data card is discussed and instructions on format for each card are provided. A sample data deck is also provided (fig. 3). The sample data illustrated in the sample deck will generate the sample EVALUE output shown in figures 1 and 2. EVALUE allows the user considerable flexibility in determining the size and content of the data deck, and considerable latitude in determining the structure of the analysis. Table 1 is a summary of data entry requirements which are described in detail in the following sections.

Output Title (4 cards)

The first four data cards are used to specify the title for the program output. The user simply chooses an appropriate title and enters the title on four data cards. The title may be typographically centered for neatness. There should always be a total of four title cards at the beginning of the data deck. If less than four cards are needed, some of the cards may be left blank, but the blank cards should be included in the data deck. Information printed on the title cards

will be centered at the top of the first page of program output (fig. 1).

Planning Period (1 card)

The user specifies the length, in years, of the planning period for the analysis. EVALUE will allow planning periods of 2 to 50 years. A 10-year planning period has been specified in the sample data deck (fig. 3). The number of years is entered on a single card which follows the output title cards. The number is entered in columns 7 and 8 and may be any whole number from 2 to 50 (if the number of years is less than 10, leave column 7 blank and enter the number in column 8).

Products and Gross Revenues (3-220 cards)

Revenues are generated in manufacturing from the sale of products. The user determines which products are to be considered in the analysis. EVALUE permits the user to specify from 1 to 20 different products. The user estimates the average price and annual sales volume of each product for each year in the analysis planning period. EVALUE multiplies prices times volume to determine gross revenue cash flow for each year.

Product data cards immediately follow the card specifying the planning period. The name of the first product is entered in columns 1 to 16 of the first product data card. Any alphanumeric characters may be used. In the sample data deck, the first product is FAS LUMBER (MBF) (fig. 3).

On the next product data card(s), the average unit prices for the first product are specified. One price estimate is made for each year. The number of estimates entered should be exactly the same as the number of years in the planning period. One estimate is entered in every eight columns, beginning with the first eight columns and continuing until all estimates have been entered. A data deck includes only as many cards as are needed to enter all estimates. For example, 10-year analyses require one card (10 estimates per 80-column card); 25-year analyses require three cards (10 estimates on each of the first two cards and 5 on the last card). In the sample data deck (fig. 3) the estimated prices for FAS lumber

(per MBF) in the first and second years are \$505.00 and \$540.00, respectively.

On the next card(s), the annual sales volumes of the first product are specified. One estimate is made for each year in the planning period. One estimate is entered in every eight columns starting in the first eight columns of the first card and continuing until all estimates have been entered. Estimates are made as whole numbers and must be right-justified in each eight-column data field. Ten estimates can be entered per card. The data deck includes only as many cards as are needed to enter all estimates. The sample data deck (fig. 3) has specified that 300 MBF of FAS lumber is to be sold in the first year and 475 MBF is to be sold in the second through tenth years.

The names, prices, and sales volumes of other products are entered on additional cards according to previous instructions. Five products have been specified in the sample data deck (fig. 3). The product names are FAS LUMBER (MBF), SELECT (MBF), #1 COMMON (MBF), #2 COMMON (MBF), and TIES (#). Regardless of how many products are specified (EVALUE allows from 1 to 20), the last product item in the data deck must be flagged with a "1" in column 18 of the card which names the last product item. Since TIES (#) is the last product item in the sample data deck, there is a "1" entered in column 18 after TIES (#).

Cost Cash Flows

After the gross revenue data in the form of product price and sales volume have been entered, the annual cost cash flows associated with the investment opportunity are entered. There are four categories of cost cash flows recognized by EVALUE. Their sequence of entry in an EVALUE data deck is as follows:

1. Raw Material Costs (2-120 cards)
2. Other Variable Costs (2-120 cards)
3. Fixed Costs (2-120 cards)
4. Capital Investment Cash Flows (2-120 cards)

* The user should be aware that with certain unconventional investment patterns, Internal Rate of Return can become a misleading criteria. EVALUE does not determine multiple internal rates of return. Limitations on Internal Rate of Return are introduced in some of the literature references (7, 4, 6).

EXAMPLE SAWMILL ANALYSIS
CASH FLOW ANALYSIS - NEW HARDWOOD SAWMILL
5 MMBF THROUGHPUT, HYPOTHETICAL DATA

INITIAL INVESTMENT REQUIREMENT \$ 550000

YEARS	1	2	3	4	5	6	7	8	9	10
FAS LUMBER (MBF)										
UNIT SALES	300	475	475	475	475	475	475	475	475	475
UNIT PRICE	\$ 505.00	\$ 540.00	\$ 570.00	\$ 600.00	\$ 630.00	\$ 660.00	\$ 690.00	\$ 720.00	\$ 750.00	\$ 780.00
SELECT (MBF)										
UNIT SALES	150	225	225	225	225	225	225	225	225	225
UNIT PRICE	\$ 485.00	\$ 515.00	\$ 545.00	\$ 575.00	\$ 610.00	\$ 640.00	\$ 670.00	\$ 700.00	\$ 730.00	\$ 760.00
#1 COMMON (MBF)										
UNIT SALES	900	1475	1475	1475	1475	1475	1475	1475	1475	1475
UNIT PRICE	\$ 415.00	\$ 445.00	\$ 475.00	\$ 510.00	\$ 545.00	\$ 580.00	\$ 625.00	\$ 650.00	\$ 680.00	\$ 710.00
#2 COMMON (MBF)										
UNIT SALES	175	325	325	325	325	325	325	325	325	325
UNIT PRICE	\$ 215.00	\$ 230.00	\$ 245.00	\$ 260.00	\$ 280.00	\$ 300.00	\$ 320.00	\$ 345.00	\$ 370.00	\$ 395.00
TIES (#)										
UNIT SALES	40000	59000	59000	59000	59000	59000	59000	59000	59000	59000
UNIT PRICE	\$ 5.00	\$ 5.40	\$ 5.90	\$ 6.40	\$ 6.90	\$ 7.50	\$ 8.20	\$ 8.90	\$ 9.60	\$ 10.40
GROSS REVENUE	\$ 835375	\$ 1422099	\$ 1521724	\$ 1628724	\$ 1738474	\$ 1853000	\$ 1988174	\$ 2095474	\$ 2210149	\$ 2330724
RAW MATERIALS COSTS										
SAWLOGS	\$ 600000	\$ 660000	\$ 726000	\$ 799000	\$ 878000	\$ 966000	\$ 1063000	\$ 1169000	\$ 1286000	\$ 1415000
TIE LOGS	\$ 32000	\$ 35000	\$ 38000	\$ 42000	\$ 45000	\$ 49000	\$ 54000	\$ 58000	\$ 64000	\$ 69000
TOTAL	\$ 632000	\$ 695000	\$ 764000	\$ 841000	\$ 923000	\$ 1015000	\$ 1117000	\$ 1227000	\$ 1350000	\$ 1484000
OTHER VARIABLE COSTS										
MILL LABOR	\$ 98000	\$ 105000	\$ 114000	\$ 123000	\$ 133000	\$ 144000	\$ 155000	\$ 170000	\$ 181000	\$ 196000
YARD LABOR	\$ 28000	\$ 30000	\$ 32000	\$ 35000	\$ 38000	\$ 41000	\$ 45000	\$ 48000	\$ 52000	\$ 56000
KILN LABOR	\$ 12000	\$ 13000	\$ 14000	\$ 15100	\$ 16300	\$ 17600	\$ 19000	\$ 20600	\$ 22200	\$ 24000
SHIPPING	\$ 12500	\$ 13500	\$ 14600	\$ 15700	\$ 17000	\$ 18400	\$ 19800	\$ 21400	\$ 23100	\$ 26000
MOB. EQUIP. OPER	\$ 6500	\$ 7400	\$ 8400	\$ 9600	\$ 11000	\$ 12500	\$ 14300	\$ 16300	\$ 18500	\$ 21100
OIL	\$ 9900	\$ 11500	\$ 13300	\$ 15500	\$ 17900	\$ 20600	\$ 24100	\$ 27900	\$ 32500	\$ 37700
ELECTRICITY	\$ 5900	\$ 6700	\$ 7700	\$ 8700	\$ 10000	\$ 11400	\$ 13000	\$ 14800	\$ 16800	\$ 19200
TOTAL	\$ 172800	\$ 187100	\$ 204000	\$ 222600	\$ 243200	\$ 265700	\$ 290200	\$ 319000	\$ 346100	\$ 380000
FIXED COSTS										
ADMIN OVERHEAD	\$ 75300	\$ 79800	\$ 84600	\$ 89400	\$ 95100	\$ 100800	\$ 106800	\$ 113200	\$ 120000	\$ 127200
MAINT AND REPAIR	\$ 25700	\$ 27200	\$ 28900	\$ 30600	\$ 32400	\$ 34400	\$ 36500	\$ 38600	\$ 40900	\$ 43400
TAXES AND INSUR.	\$ 7900	\$ 8700	\$ 9600	\$ 10500	\$ 11600	\$ 12700	\$ 14000	\$ 15400	\$ 16900	\$ 18600
OPER. SUPPLIES	\$ 5000	\$ 2100	\$ 2200	\$ 2300	\$ 2400	\$ 2500	\$ 2600	\$ 2700	\$ 2800	\$ 2900
CONTINGENCIES	\$ 10000	\$ 11000	\$ 12000	\$ 13000	\$ 14000	\$ 15000	\$ 16000	\$ 17000	\$ 18000	\$ 19000
MISC. UTILITIES	\$ 5000	\$ 5000	\$ 5500	\$ 5500	\$ 6000	\$ 6000	\$ 6600	\$ 6600	\$ 7100	\$ 7100
TOTAL	\$ 128900	\$ 133800	\$ 142800	\$ 151300	\$ 161500	\$ 171400	\$ 182500	\$ 193500	\$ 205700	\$ 218200
CAPITAL INVESTMENT										
WORKING CAPITAL	\$ 15000	\$ 16000	\$ 17000	\$ 18000	\$ 20000	\$ 21000	\$ 22000	\$ 24000	\$ 26000	\$ 0
NEW EQUIPMENT	\$ 0	\$ 0	\$ 0	\$ 72000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
TOTAL	\$ 15000	\$ 16000	\$ 17000	\$ 90000	\$ 20000	\$ 21000	\$ 22000	\$ 24000	\$ 26000	\$ 0
SALVAGE VALUE										\$ 144000
DEPRECIATION	\$ 55800	\$ 50500	\$ 45100	\$ 39700	\$ 57200	\$ 39400	\$ 34200	\$ 27400	\$ 20800	\$ 13700
PROFIT BEFORE TAXES	\$ -98325	\$ 406199	\$ 410924	\$ 413824	\$ 410774	\$ 400900	\$ 398474	\$ 355974	\$ 308349	\$ 248524
(THE TAX RATE IS .08)										
AFTER TAX PROFIT	\$ -154125	\$ 219964	\$ 190229	\$ 194545	\$ 183859	\$ 167773	\$ 189423	\$ 170859	\$ 149526	\$ 122109
AFTER TAX EARNINGS	\$ -98325	\$ 270464	\$ 235329	\$ 234245	\$ 241059	\$ 227573	\$ 223623	\$ 198259	\$ 170326	\$ 279809
A.T. NET CASH FLOW	\$ -113325	\$ 254464	\$ 218329	\$ 144245	\$ 221059	\$ 206573	\$ 201623	\$ 174259	\$ 144326	\$ 279809

Figure 1.—First part of EVALUE output.

The user specifies the items which are to be included in each category and estimates the amount, in dollars, of each cash flow item for each year in the planning period. EVALUE permits the user to have up to 20 different items in each category. Each annual estimate should be the total year-end cost estimate for each cash

flow item. Cost cash flow data are entered into a data deck in the order specified above.

Raw material cost data are entered on cards which follow the product, price, and sales volume entries. The name of the first raw material item is entered in the first 16 columns of the first card. Annual cost estimates for

the first raw material item are entered on the next card(s) with one annual estimate entered for each year in the analysis. Estimates are entered as whole numbers justified right in every eight columns, using only as many cards as are required to enter all estimates. Additional raw material items and cost estimates are entered

on additional cards according to the same instructions. A "1" must be entered in column 18 of the card which names the last raw material item in the data deck. In the sample data deck (fig. 3) two raw material items are specified, SAWLOGS and TIE LOGS. The total cost shown in the sample data deck for sawlogs is \$600,000 at the end of the first year, \$660,000 at the end of the second year, etc. Likewise, the total cost for tie logs is \$32,000 at the end of the first year, \$35,000 at the end of the second year, etc. Note that TIE LOGS is the last raw material item specified and, therefore, a "1" is entered in column 18 after TIE LOGS. If there are no raw material items in an analysis, blank cards (2 to 6) are placed in the data deck at this point, instead of raw material data cards. The first card must have a "1" entered in column 18.

The data for Other Variable Costs, Fixed Costs, and Capital Investment Cash Flows are entered after the Raw Material Costs data according to the same instructions. From 1 to 20 items are permitted in each category. A "1" must be entered in column 18 of the card which names the last item in each category. If there are no items in a category, blank cards (2 to 6) with a "1" entered in column 18 of the first card are used. In the sample data deck (fig. 3) there are seven items in the category of Other Variable Costs (MILL LABOR, YARD LABOR, KILN LABOR, SHIPPING, MOB. EQUIP. OPER., OIL, and ELECTRICITY), six items in the category of Fixed Costs (ADMIN OVERHEAD, MAINT AND REPAIR, TAXES AND INSUR., OPER. SUPPLIES, CONTINGENCIES, and MISC. UTILITIES), and two items in the category of Capital Investment Cash Flows (WORKING CAPITAL and NEW EQUIPMENT).

Depreciation (1-5 cards)

The user estimates the depreciation schedule in dollars. Those users who are unfamiliar with determining depreciation schedules may wish to consult a current tax guide or someone who is familiar with various methods for determining depreciation schedules. There are many different methods and a number of rules governing which types of schedules are permissible under specific circumstances.

Total annual depreciation for the in-

vestment opportunity is entered on data card(s) following the capital investment entries. One annual depreciation allowance estimate is entered for each year in the planning period. Estimates are entered as whole numbers, right-justified, in every eight columns, using only as many data cards as are required for all estimates. In the sample data deck (fig. 3), depreciation is \$55,800 for the first year, \$50,500 for the second year, etc.

Initial Investment Tax Credit, and Tax Rate (1 card)

The user estimates initial investment and first-year Investment Tax Credit in dollars and determines an appropriate tax rate to be used in the analysis. Initial investment is the total amount of investment capital required at the beginning of the investment planning period (at time zero). The Investment Tax Credit is a credit against federal income tax which is allowed for most types of investment in manufacturing. Federal Investment Tax Credit is commonly equal to 10 percent of a given investment. The ef-

fective tax rate is that fraction of taxable income (gross revenues minus total costs and depreciation) that EVALUE will consider to be taken as federal and state taxes combined. Users who are unfamiliar with tax rates or tax credits may wish to consult a tax guide or someone familiar with current regulations.

Investment Tax Credit, tax rate, and initial investment are entered on one data card, following the depreciation data entries. Investment Tax Credit is estimated as a whole number and entered, right-justified in columns 1 to 10. Tax rate is estimated as a decimal fraction and entered in columns 11 to 20 with a decimal point. Initial investment is estimated as a whole number and is entered, right-justified in columns 21 to 30. In the sample data deck (fig. 3) Investment Tax Credit was specified as \$35,000, the tax rate as 0.48 (i.e., 48 pct), and the initial investment as \$550,000.

Salvage Value and Discount Rate (1 card)

The user estimates end-of-planning-period salvage value and chooses an

Table 1.—A summary of data requirements for EVALUE

Data card	Number of cards	Contents	Format
Output title	4	Centered title for output headings	4(20A4)
Time periods	1	Number of years in analysis (= N)	6X.12
Gross revenue	up to 20 products or 220 cards	Product name,* Product prices, Product sales volumes	4A4/ N(FB)/ N(18)
Raw materials	Up to 20 items or 120 cards	Raw material name,* Total annual cost cash flows	4A4/ N(18)
Other variable costs	up to 20 items or 120 cards	Cost item name,* Total annual cost cash flows	4A4/ N(18)
Fixed costs	up to 20 items or 120 cards	Cost item name,* Total annual cost cash flows	4A4/ N(18)
Capital investments (annual)	up to 20 items or 120 cards	Cost item name,* Total annual cost cash flows	4A4/ N(18)
Depreciation	1 to 5	Annual depreciation schedule	N(18)
Tax credit	1	First-year tax credit,	I10.
Tax rate,		Effective tax rate,	F10.
Initial investment		Initial investment	I10
Salvage value,	1	Net salvage value,	I10.
Discount rate		Discount rate	F10

*The last name in each category must be "flagged" by punching a "1" in column 18 after the name

appropriate discount rate for the analysis. EVALUE uses the specified discount rate for discounting all cost and benefit cash flows in determining present value. The salvage value in EVALUE is the net cash value of remaining equipment, facilities, buildings, and other capital equipment, which are accounted for at the end of the planning period. In determining net salvage value, the user should deduct disposal costs and any associated taxes such as taxes due to depreciation recapture. The net salvage value should not be confused with adjusted basis, "book value," or "trade-in value," since those are estimates of the gross (rather than net) salvage value.

Salvage value is entered as a whole number right-justified in columns 1 to

10, on the last card in the data deck. The discount rate is entered as a decimal fraction with a decimal point, in columns 11 to 20. In the sample data deck (fig. 3) a salvage value of \$44,000 and a discount rate of 0.15 (i.e., 15 pct) are specified.

EVALUE Output

The structure and content of the EVALUE output is determined largely by the data input. The first part of the output (fig. 1) is a straightforward summary of cash flows, in a form which is commonly presented in textbooks on cash flow analysis. EVALUE will adjust the length of the output relative to the number of cash flow items which are input as data.

EVALUE will also automatically add additional pages of output summary for analyses which go beyond 10 years and require more than 10 columns of output.

The second part of the output (fig. 2) contains several commonly used investment analysis criteria which are used for ranking investments or decision-making relative to investment opportunities. The mathematical derivation of the criteria and explanations of their usefulness may be found in texts and publications dealing with cash flow and investment analysis. The EVALUE program and listing (appendix) contain sufficient internal documentation for locating the program statements and formulas used in calculating the investment criteria.

DISCOUNTED CASH FLOWS AND INVESTMENT CRITERIA

YEARS		AFTER TAX NET CASH FLOW	X	PRESENT VALUE FACTOR AT R= 15.00%	=	PRESENT VALUE OF NET CASH FLOW		CUMULATIVE NET CASH FLOW
0	\$	-550000		1.00000	\$	-550000	\$	-550000
1	\$	-113325		.86957	\$	-98543	\$	-648543
2	\$	254464		.75614	\$	192411	\$	-456132
3	\$	218329		.65752	\$	143554	\$	-312578
4	\$	144245		.57175	\$	82472	\$	-230106
5	\$	221059		.49718	\$	109905	\$	-120201
6	\$	206573		.43233	\$	89307	\$	-30894
7	\$	201623		.37594	\$	75797	\$	44903
8	\$	174259		.32690	\$	56965	\$	101868
9	\$	144326		.28426	\$	41026	\$	142894
10	\$	279809		.24718	\$	69164	\$	212058

THE PRESENT NET WORTH (PNW) IS \$ 212058 AT 15.00 % DISCOUNT

THE TOTAL INITIAL INVESTMENT REQUIREMENT IS \$ 550000

THE PAYBACK PERIOD (PBP) BASED ON AFTER TAX NET CASH FLOW IS 4.21 YEARS

THE INTERNAL RATE OF RETURN (IROW) BASED ON AFTER TAX NET CASH FLOW IS 22.20 %

THE PRESENT NET WORTH/INITIAL INVESTMENT RATIO IS 38.56 %

Figure 2.—Second part of EVALUE output.

EXAMPLE SAWMILL ANALYSIS
CASH FLOW ANALYSIS - NEW HARDWOOD SAWMILL
5 MMBF THROUGHPUT, HYPOTHETICAL DATA

10										
FAS LUMBER (MBF)										
505.00	540.00	570.00	600.00	630.00	660.00	690.00	720.00	750.00	780.00	
300	475	475	475	475	475	475	475	475	475	
SELECT (MBF)										
485.00	515.00	545.00	575.00	610.00	640.00	670.00	700.00	730.00	760.00	
150	225	225	225	225	225	225	225	225	225	
#1 COMMON (MBF)										
415.00	445.00	475.00	510.00	545.00	580.00	625.00	650.00	680.00	710.00	
900	1475	1475	1475	1475	1475	1475	1475	1475	1475	
#2 COMMON (MBF)										
215.00	230.00	245.00	260.00	280.00	300.00	320.00	345.00	370.00	395.00	
175	325	325	325	325	325	325	325	325	325	
TIES (#)		1								
5.00	5.40	5.90	6.40	6.90	7.50	8.20	8.90	9.60	10.40	
40000	59000	59000	59000	59000	59000	59000	59000	59000	59000	
SAWLOGS										
600000	660000	726000	799000	878000	966000	1063000	1169000	1286000	1415000	
TIE LOGS		1								
32000	35000	38000	42000	45000	49000	54000	58000	64000	69000	
MILL LABOR										
98000	105000	114000	123000	133000	144000	155000	170000	181000	196000	
YARD LABOR										
28000	30000	32000	35000	38000	41000	45000	48000	52000	56000	
KILN LABOR										
12000	13000	14000	15100	16300	17600	19000	20600	22200	24000	
SHIPPING										
12500	13500	14600	15700	17000	18400	19800	21400	23100	26000	
MOB. EQUIP. OPER										
6500	7400	8400	9600	11000	12500	14300	16300	18500	21100	
OIL										
9900	11500	13300	15500	17900	20800	24100	27900	32500	37700	
ELECTRICITY		1								
5900	5700	7700	8700	10000	11400	13000	14800	16800	19200	
ADMIN OVERHEAD										
75300	79800	84600	89400	95100	100800	106800	113200	120000	127200	
MAINT AND REPAIR										
25700	27200	28900	30600	32400	34400	36500	38600	40900	43400	
TAXES AND INSUR.										
7900	8700	9600	10500	11600	12700	14000	15400	16900	18600	
OPER. SUPPLIES										
5000	2100	2200	2300	2400	2500	2600	2700	2800	2900	
CONTINGENCIES										
10000	11000	12000	13000	14000	15000	16000	17000	18000	19000	
MISC. UTILITIES		1								
5000	5000	5500	5500	6000	6000	6600	6600	7100	7100	
WORKING CAPITAL										
15000	16000	17000	18000	20000	21000	22000	24000	26000		
NEW EQUIPMENT		1								
0	0	0	72000	0	0	0	0	0	0	
55800	50500	45100	39700	57200	39800	34200	27400	20800	13700	
35000	0.480	550000								
144000	0.15									

Figure 3.—EVALUE data deck, sample data.

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Appendix

Listing of EVALUE Program Statements

DIMENSION CINV(4,20),CUNF(50),FIXC(4,20),NNIT(50),OTHC(4,20),	EVAL 10
1P(50,20),PVF(50),RMAT(4,20),TITL(80),SALE(4,20)	EVAL 20
INTEGER A(50,20),ATRN(50),ATPR(50),B(50,20),CDCF(50),	EVAL 30
1C(50,20),D(50,20),E(50,20),F(50),FLAG,GROS(50),	EVAL 40
2NFLO(50),PRBF(50),PVNF(50),S,SUMF(50),T,TAXL,TUNT,	EVAL 50
3TB(50),TC(50),TD(50),TE(50)	EVAL 60
C READ IN TITLE OF OUTPUT AND THE NUMBER OF YEARS IN THE ANALYSIS	EVAL 70
READ(5,1) (TITL(I),I=1,80)	EVAL 80
1 FORMAT(20A4)	EVAL 90
READ(5,4) TUNT	EVAL 100
C READ IN NAMES AND CASH FLOWS OF 'SALES','RAW MATERIALS','OTHER	EVAL 110
C VARIABLE COSTS','FIXED COSTS',AND 'CAPITAL INVESTMENT' CATEGORIES	EVAL 120
NSAL=0	EVAL 130
DO 5 J=1,20	EVAL 140
NSAL=NSAL+1	EVAL 150
READ(5,2) (SALE(I,J),I=1,4),FLAG	EVAL 160
2 FORMAT(4A4,I2)	EVAL 170
READ(5,3) (P(I,J),I=1,TUNT)	EVAL 180
3 FORMAT(10F8)	EVAL 190
READ(5,4) (A(I,J),I=1,TUNT)	EVAL 200
4 FORMAT(10I8)	EVAL 210
IF(FLAG.EQ.1) GO TO 6	EVAL 220
5 CONTINUE	EVAL 230
6 CONTINUE	EVAL 240
CALL SUB1(RMAT,B,TB,L1,TUNT)	EVAL 250
CALL SUB1(OTHC,C,TC,L2,TUNT)	EVAL 260
CALL SUB1(FIXC,D,TD,L3,TUNT)	EVAL 270
CALL SUB1(CINV,E,TE,L4,TUNT)	EVAL 280
C READ IN TOTAL DEPRECIATION FOR EACH TIME PERIOD	EVAL 290
READ(5,4) (F(I),I=1,TUNT)	EVAL 300
C READ IN THE INVESTMENT TAX CREDIT, TAX RATE, AND INITIAL INVESTMENT	EVAL 310
READ(5,12) ITCR,TXRT,IVST	EVAL 320
DO 11 I=1,TUNT	EVAL 330
GROS(I)=0.0	EVAL 340
DO 7 J=1,NSAL	EVAL 350
GROS(I)=GROS(I)+P(I,J)*A(I,J)	EVAL 360
7 CONTINUE	EVAL 370
C CALCULATE PROFIT BEFORE TAXES (PRBF) FOR EACH TIME PERIOD	EVAL 380
PRBF(I)=GROS(I)-TB(I)-TC(I)-TD(I)	EVAL 390
C CALCULATE AFTER TAX PROFIT (ATPR) FOR EACH TIME PERIOD	EVAL 400
IF((PRBF(I)-F(I)).LE.0) ATPR(I)=PRBF(I)-F(I)	EVAL 410
IF((PRBF(I)-F(I)).LE.0) GO TO 10	EVAL 420
C CALCULATE TAX LIABILITY IF APPLICABLE	EVAL 430
TAXL=TXRT*(PRBF(I)-F(I))	EVAL 440
ATPR(I)=PRBF(I)-F(I)-TAXL	EVAL 450
C CALCULATE REDUCTION IN TAX LIABILITY FROM INVESTMENT TAX CREDIT	EVAL 460
IF(ITCR.LE.0) GO TO 10	EVAL 470
IF(TAXL.LT.ITCR) GO TO 8	EVAL 480
TAXL=TAXL-ITCR	EVAL 490
ITCR=0	EVAL 500
GO TO 9	EVAL 510
8 CONTINUE	EVAL 520
ITCR=ITCR-TAXL	EVAL 530
TAXL=0.0	EVAL 540

9 CONTINUE	EVAL 550
ATPR(I)=PRBF(I)-F(I)-TAXL	EVAL 560
10 CONTINUE	EVAL 570
C CALCULATE AFTER TAX EARNINGS (ATRN) FOR EACH TIME PERIOD	EVAL 580
ATRN(I)=ATPR(I)+F(I)	EVAL 590
C CALCULATE AFTER TAX NET CASH FLOW (NFLO) FOR EACH TIME PERIOD	EVAL 600
NFLO(I)=ATRN(I)-TE(I)	EVAL 610
11 CONTINUE	EVAL 620
C READ IN THE SALVAGE VALUE AND THE DISCOUNT RATE	EVAL 630
READ(5,12) ISAL,DISR	EVAL 640
12 FORMAT(I10,F10,I10)	EVAL 650
ATRN(TUNT)=ATPR(TUNT)+F(TUNT)+ISAL	EVAL 660
NFLO(TUNT)=ATRN(TUNT)-TE(TUNT)	EVAL 670
ROI=0.0	EVAL 680
IT1=1	EVAL 690
ITT1=2	EVAL 700
IT2=1	EVAL 710
ITT2=2	EVAL 720
IT3=1	EVAL 730
ITT3=2	EVAL 740
13 CONTINUE	EVAL 750
C CALCULATE INTERNAL RATE OF RETURN	EVAL 760
IF(ROI .LT. 0.0) GO TO 23	EVAL 770
IF(ROI .GT. 1.0) GO TO 23	EVAL 780
CUNF(1)=(NFLO(1)/(1.0+ROI))-IVST	EVAL 790
DO 14 I=2,TUNT	EVAL 800
CUNF(I)=CUNF(I-1)+(NFLO(I)/((1.0+ROI)**(I)))	EVAL 810
14 CONTINUE	EVAL 820
IF(IT1 .EQ. ITT1) GO TO 17	EVAL 830
IF(CUNF(TUNT)) 15,23,16	EVAL 840
15 ROI=ROI-0.1	EVAL 850
IT1=3	EVAL 860
GO TO 13	EVAL 870
16 ROI=ROI+0.1	EVAL 880
ITT1=3	EVAL 890
GO TO 13	EVAL 900
17 IF(IT2 .EQ. ITT2) GO TO 20	EVAL 910
IF(CUNF(TUNT)) 18,23,19	EVAL 920
18 ROI=ROI-0.01	EVAL 930
IT2=3	EVAL 940
GO TO 13	EVAL 950
19 ROI=ROI+0.01	EVAL 960
ITT2=3	EVAL 970
GO TO 13	EVAL 980
20 IF(IT3 .EQ. ITT3) GO TO 23	EVAL 990
IF(CUNF(TUNT)) 21,23,22	EVAL 1000
21 ROI=ROI-0.001	EVAL 1010
IT3=3	EVAL 1020
GO TO 13	EVAL 1030
22 ROI=ROI+0.001	EVAL 1040
ITT3=3	EVAL 1050
GO TO 13	EVAL 1060
23 RROI=100.0*ROI	EVAL 1070
IF(RROI .LE. 0.0) RROI=0.0	EVAL 1080
IF(RROI .GE. 100.0) RROI=100.0	EVAL 1090
24 CONTINUE	EVAL 1100
C CALCULATE THE PRESENT VALUE OF THE NET CASH FLOW FOR EACH YEAR	EVAL 1110
C AND THE CUMULATIVE NET CASH FLOW AT THE GIVEN DISCOUNT RATE	EVAL 1120
DO 25 I=1,TUNT	EVAL 1130
PVNF(I)=NFLO(I)/((1+DISR)**(I))	EVAL 1140

PVF(I)=1.0/((1+DISR)**(I))	EVAL1150
25 CONTINUE	EVAL1160
CDCF(I)=PVNF(I)-IVST	EVAL1170
SUMF(I)=NFLO(I)-IVST	EVAL1180
DO 26 I=2,TUNT	EVAL1190
CDCF(I)=CDCF(I-1)+PVNF(I)	EVAL1200
SUMF(I)=SUMF(I-1)+NFLO(I)	EVAL1210
26 CONTINUE	EVAL1220
C CALCULATE PRESENT VALUE/INVESTMENT RATIO PERCENT	EVAL1230
PVIC=(100.0*CDCF(TUNT))/IVST	EVAL1240
C CALCULATE PAYBACK PERIOD (PBAK) IN THE GIVEN TIME UNITS	EVAL1250
DO 28 I=1,TUNT	EVAL1260
IF(J.GT.1) GO TO 27	EVAL1270
DIFF=SUMF(I)+IVST+0.0001	EVAL1280
PBAK=IVST/DIFF	EVAL1290
IF(SUMF(I).GT.0) GO TO 29	EVAL1300
GO TO 28	EVAL1310
27 CONTINUE	EVAL1320
DIFF=SUMF(I)-SUMF(I-1)+0.0001	EVAL1330
PBAK=(I-1)+((-SUMF(I-1))/DIFF)	EVAL1340
IF(SUMF(I).GT.0) GO TO 29	EVAL1350
28 CONTINUE	EVAL1360
29 CONTINUE	EVAL1370
DISR=DISR*100.0	EVAL1380
DO 30 I=1,TUNT	EVAL1390
30 NNIT(I)=I	EVAL1400
WRITE(6,31) (TTTL(I),I=1,80),IVST	EVAL1410
31 FORMAT('I',4(20X,20A4/)) INITIAL INVESTMENT REQUIREMENT \$',I10//)	EVAL1420
C	EVAL1430
C WRITE CASH FLOWS	EVAL1440
C	EVAL1450
S=1	EVAL1460
T=10	EVAL1470
K=(TUNT/10)+2	EVAL1480
IF((TUNT-10).LT.0) T=TUNT	EVAL1490
DO 69 M=1,K	EVAL1500
IF(M.EQ.1) WRITE(6,32) (NNIT(I),I=S,T)	EVAL1510
32 FORMAT(15X,'YEARS',5X,9(12,8X),12//)	EVAL1520
IF(M.GT.1) WRITE(6,33) (NNIT(I),I=S,T)	EVAL1530
33 FORMAT('O'///15X,'YEARS',5X,9(12,8X),12//)	EVAL1540
KK=T-S+1	EVAL1550
DO 36 J=1,NSAL	EVAL1560
WRITE(6,34) (SALE(I,J),I=1,4),(A(I,J),I=S,T)	EVAL1570
34 FORMAT('O',4A4/4X,'UNIT SALES',6X,10I10)	EVAL1580
WRITE(6,35) (P(I,J),I=S,T)	EVAL1590
35 FORMAT(' ',3X,'UNIT PRICE',6X,10(3X,F7.2))	EVAL1600
CALL DOLS(KK)	EVAL1610
36 CONTINUE	EVAL1620
WRITE(6,37) (GROS(I),I=S,T)	EVAL1630
37 FORMAT('O',5X,'GROSS REVENUE',3X,10(18,2X))	EVAL1640
CALL DOLS(KK)	EVAL1650
WRITE(6,38) (RMAT(I,1),I=1,4),(B(I,1),I=S,T)	EVAL1660
38 FORMAT('ORAW MATERIALS COSTS'/4X,4A4,2X,10(18,2X))	EVAL1670
CALL DOLS(KK)	EVAL1680
IF(L1.EQ.1) GO TO 41	EVAL1690
L=1	EVAL1700
39 L=L+1	EVAL1710
WRITE(6,40) (RMAT(I,L),I=1,4),(B(I,L),I=S,T)	EVAL1720
40 FORMAT(' ',3X,4A4,10I10)	EVAL1730
IF(L1.EQ.L) GO TO 41	EVAL1740

GO TO 39	EVAL1750
41 CONTINUE	EVAL1760
WRITE(6,42)(TB(I),I=S,T)	EVAL1770
42 FORMAT(6X,'TOTAL',11X,10(I8,2X))	EVAL1780
CALL DOLS(KK)	EVAL1790
WRITE(6,43)(OTH(I,1),I=1,4),(C(I,1),I=S,T)	EVAL1800
43 FORMAT('00OTHER VARIABLE COSTS'/4X,4A4,2X,10(I8,2X))	EVAL1810
CALL DOLS(KK)	EVAL1820
IF(L2 .EQ. 1) GO TO 45	EVAL1830
L=1	EVAL1840
44 L=L+1	EVAL1850
WRITE(6,40)(OTH(I,L),I=1,4),(C(I,L),I=S,T)	EVAL1860
IF(L2 .EQ. L) GO TO 45	EVAL1870
GO TO 44	EVAL1880
45 CONTINUE	EVAL1890
WRITE(6,42)(TC(I),I=S,T)	EVAL1900
CALL DOLS(KK)	EVAL1910
WRITE(6,46)(FIXC(I,1),I=1,4),(D(I,1),I=S,T)	EVAL1920
46 FORMAT('0FIXED COSTS'/4X,4A4,2X,10(I8,2X))	EVAL1930
CALL DOLS(KK)	EVAL1940
IF(L3 .EQ. 1) GO TO 48	EVAL1950
L=1	EVAL1960
47 L=L+1	EVAL1970
WRITE(6,40)(FIXC(I,L),I=1,4),(D(I,L),I=S,T)	EVAL1980
IF(L3 .EQ. L) GO TO 48	EVAL1990
GO TO 47	EVAL2000
48 CONTINUE	EVAL2010
WRITE(6,42)(TD(I),I=S,T)	EVAL2020
CALL DOLS(KK)	EVAL2030
WRITE(6,49)(CINV(I,1),I=1,4),(E(I,1),I=S,T)	EVAL2040
49 FORMAT('0CAPITAL INVESTMENT'/4X,4A4,2X,10(I8,2X))	EVAL2050
CALL DOLS(KK)	EVAL2060
IF(L4 .EQ. 1) GO TO 51	EVAL2070
L=1	EVAL2080
50 L=L+1	EVAL2090
WRITE(6,40)(CINV(I,L),I=1,4),(E(I,L),I=S,T)	EVAL2100
IF(L4 .EQ. L) GO TO 51	EVAL2110
GO TO 50	EVAL2120
51 CONTINUE	EVAL2130
WRITE(6,42)(TE(I),I=S,T)	EVAL2140
CALL DOLS(KK)	EVAL2150
IF(TUNT .GT. T) GO TO 62	EVAL2160
ND=T-S+1	EVAL2170
IF(ND .EQ. 1) WRITE(6,52) ISAL	EVAL2180
IF(ND .EQ. 2) WRITE(6,53) ISAL	EVAL2190
IF(ND .EQ. 3) WRITE(6,54) ISAL	EVAL2200
IF(ND .EQ. 4) WRITE(6,55) ISAL	EVAL2210
IF(ND .EQ. 5) WRITE(6,56) ISAL	EVAL2220
IF(ND .EQ. 6) WRITE(6,57) ISAL	EVAL2230
IF(ND .EQ. 7) WRITE(6,58) ISAL	EVAL2240
IF(ND .EQ. 8) WRITE(6,59) ISAL	EVAL2250
IF(ND .EQ. 9) WRITE(6,60) ISAL	EVAL2260
IF(ND .EQ. 10) WRITE(6,61) ISAL	EVAL2270
52 FORMAT('0SALVAGE VALUE',7X,'S',I8)	EVAL2280
53 FORMAT('0SALVAGE VALUE',17X,'S',I8)	EVAL2290
54 FORMAT('0SALVAGE VALUE',27X,'S',I8)	EVAL2300
55 FORMAT('0SALVAGE VALUE',37X,'S',I8)	EVAL2310
56 FORMAT('0SALVAGE VALUE',47X,'S',I8)	EVAL2320
57 FORMAT('0SALVAGE VALUE',57X,'S',I8)	EVAL2330
58 FORMAT('0SALVAGE VALUE',67X,'S',I8)	EVAL2340

59	FORMAT('0SALVAGE VALUE',77X,'S',18)	EVAL2350
60	FORMAT('0SALVAGE VALUE',87X,'S',18)	EVAL2360
61	FORMAT('0SALVAGE VALUE',97X,'S',18)	EVAL2370
62	CONTINUE	EVAL2380
	WRITE(6,63) (F(I), I=S,T)	EVAL2390
63	FORMAT('0DEPRECIATION',9X,10(18,2X))	EVAL2400
	CALL DOLS(KK)	EVAL2410
	WRITE(6,64) (PRBF(I), I=S,T)	EVAL2420
64	FORMAT('0PROFIT BEFORE TAXES',2X,10(18,2X))	EVAL2430
	CALL DOLS(KK)	EVAL2440
	WRITE(6,65) TXRT	EVAL2450
65	FORMAT(' (THE TAX RATE IS',F4.2,')')	EVAL2460
	WRITE(6,66) (ATPR(I), I=S,T)	EVAL2470
66	FORMAT(' AFTER TAX PROFIT',5X,10(18,2X))	EVAL2480
	CALL DOLS(KK)	EVAL2490
	WRITE(6,67) (ATRN(I), I=S,T)	EVAL2500
67	FORMAT(' AFTER TAX EARNINGS',3X,10(18,2X))	EVAL2510
	CALL DOLS(KK)	EVAL2520
	WRITE(6,68) (NFLO(I), I=S,T)	EVAL2530
68	FORMAT(' A.T. NET CASH FLOW',3X,10(18,2X))	EVAL2540
	CALL DOLS(KK)	EVAL2550
	IF(TUNT .EQ. T) GO TO 70	EVAL2560
	S=S+10	EVAL2570
	T=T+10	EVAL2580
	IF(T .GE. TUNT) T=TUNT	EVAL2590
69	CONTINUE	EVAL2600
70	CONTINUE	EVAL2610
	WRITE(6,71) DISR	EVAL2620
71	FORMAT('1',22X,'DISCOUNTED CASH FLOWS AND INVESTMENT CRITERIA'///	EVAL2630
	118X,'AFTER TAX NET',6X,'X',6X,'PRESENT VALUE',5X,'=',6X,'PRESENT	EVAL2640
	2ALUE OF',3X,'YEARS',12X,'CASH FLOW',17X,'FACTOR AT',16X,'NET CASH	EVAL2650
	3FLOW',9X,'CUMULATIVE NET CASH FLOW',46X,'R=',F6.2,'X'///)	EVAL2660
	IVST=-IVST	EVAL2670
	IZRO=0	EVAL2680
	ONER=1.0	EVAL2690
	WRITE(6,72) IZRO,IVST,ONER,IVST,IVST,	EVAL2700
	1(NNIT(I),NFLO(I),PVF(I),PVNF(I),CDCF(I), I=1,T)	EVAL2710
72	FORMAT(4X,I2,9X,'S',1X,I10,19X,F8.5,14X,'S',1X,I10,21X,'S ',I10)	EVAL2720
	IVST=-IVST	EVAL2730
	WRITE(6,73) CDCF(TUNT),DISR	EVAL2740
73	FORMAT(///3X,'THE PRESENT NET WORTH (PNW) IS',2X,'S',I10,' AT',	EVAL2750
	1F6.2,' X DISCOUNT'///)	EVAL2760
	WRITE(6,74) IVST	EVAL2770
74	FORMAT(3X,'THE TOTAL INITIAL INVESTMENT REQUIREMENT IS',	EVAL2780
	13X,'S',I10//)	EVAL2790
	IF(SUMF(TUNT) .GE. 0) GO TO 76	EVAL2800
	WRITE(6,75) TUNT	EVAL2810
75	FORMAT(3X,'THE INVESTMENT IS NOT REPAID IN',I2,1X,'YEARS'///)	EVAL2820
76	CONTINUE	EVAL2830
	IF(SUMF(TUNT) .LT. 0) GO TO 78	EVAL2840
	WRITE(6,77) PBAK	EVAL2850
77	FORMAT(3X,'THE PAYBACK PERIOD (PHP) BASED ON AFTER TAX NET CASH FLOW	EVAL2860
	10W IS',F5.2,1X,'YEARS'///)	EVAL2870
78	CONTINUE	EVAL2880
	IF(ROWI .GT. 0.0 .AND. ROWI .LT. 100.00) WRITE(6,79) ROWI	EVAL2890
79	FORMAT(3X,'THE INTERNAL RATE OF RETURN (IROR) BASED ON AFTER TAX	EVAL2900
	1ET CASH FLOW IS',F6.2,' X'///)	EVAL2910
	IF(ROWI .LE. 0.0) WRITE(6,80)	EVAL2920
80	FORMAT(3X,'INTERNAL RATE OF RETURN IS LESS THAN OR EQUAL TO 0.0X'//	EVAL2930
	A//)	EVAL2940

IF(RORI .GE. 100.0) WRITE(6,81)	EVAL2950
81 FORMAT(3X,'INTERNAL RATE OF RETURN IS GREATER THAN OR EQUAL TO 100	EVAL2960
BX'//)	EVAL2970
WRITE(6,82) PVIC	EVAL2980
82 FORMAT(3X,'THE PRESENT NET WORTH/INITIAL INVESTMENT RATIO IS ',	EVAL2990
1F7.2,1X,'%'//)	EVAL3000
WRITE(6,83)	EVAL3010
83 FORMAT('1','*****')	EVAL3020
SUBROUTINE SUB1(MDNG,ICFL,ITCF,L,NUNT)	EVAL3030
DIMENSION MDNG(4,20),ICFL(50,20),ITCF(50)	EVAL3040
INTEGER FLAG	EVAL3050
FLAG=0	EVAL3060
DO 86 J=1,20	EVAL3070
L=J	EVAL3080
READ(5,84)(MDNG(I,J),I=1,4),FLAG	EVAL3090
84 FORMAT(4A4,I2)	EVAL3100
READ(5,85)(ICFL(I,J),I=1,NUNT)	EVAL3110
85 FORMAT(10I8)	EVAL3120
IF(FLAG .EQ. 1) GO TO 87	EVAL3130
86 CONTINUE	EVAL3140
87 CONTINUE	EVAL3150
LL=L+1	EVAL3160
DO 88 J=1,LL	EVAL3170
IF(J .EQ. LL) GO TO 89	EVAL3180
DO 88 I=1,NUNT	EVAL3190
ITCF(I)=ITCF(I)+ICFL(I,J)	EVAL3200
88 CONTINUE	EVAL3210
89 CONTINUE	EVAL3220
RETURN	EVAL3230
SUBROUTINE DOLS(KK)	EVAL3240
IF(KK .EQ. 1) WRITE(6,90)	EVAL3250
IF(KK .EQ. 2) WRITE(6,91)	EVAL3260
IF(KK .EQ. 3) WRITE(6,92)	EVAL3270
IF(KK .EQ. 4) WRITE(6,93)	EVAL3280
IF(KK .EQ. 5) WRITE(6,94)	EVAL3290
IF(KK .EQ. 6) WRITE(6,95)	EVAL3300
IF(KK .EQ. 7) WRITE(6,96)	EVAL3310
IF(KK .EQ. 8) WRITE(6,97)	EVAL3320
IF(KK .EQ. 9) WRITE(6,98)	EVAL3330
IF(KK .EQ. 10) WRITE(6,99)	EVAL3340
90 FORMAT('+',20X,'S')	EVAL3350
91 FORMAT('+',20X,2('S',9X))	EVAL3360
92 FORMAT('+',20X,3('S',9X))	EVAL3370
93 FORMAT('+',20X,4('S',9X))	EVAL3380
94 FORMAT('+',20X,5('S',9X))	EVAL3390
95 FORMAT('+',20X,6('S',9X))	EVAL3400
96 FORMAT('+',20X,7('S',9X))	EVAL3410
97 FORMAT('+',20X,8('S',9X))	EVAL3420
98 FORMAT('+',20X,9('S',9X))	EVAL3430
99 FORMAT('+',20X,10('S',9X))	EVAL3440
RETURN	EVAL3450
END	EVAL3460

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VALUE: A Computer Program for Evaluating Investments in Forest Products Industries, by Peter J. Ince and Philip H. Steele, Madison, Wis., For. Prod. Lab., 1980. 12 p. (USDA For. Serv. Gen. Tech. Rep. FPL-30).

VALUE is a FORTRAN computer program for investment cash flow analysis. It can be used as an aid in evaluating and analyzing potential investment opportunities (manufacturing facilities, equipment, facility improvement). Also by researchers in cost benefit studies of new technology or processes.

This paper explains how to use VALUE and is strictly a guide and not intended as an introduction to financial analysis.

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